

Before the
Federal Communications Commission
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of)

Amendment of Parts 2, 15 and 97)

of the Commission's Rules to Permit)

Use of Radio Frequencies Above 40 GHz)

for New Radio Applications)

ET Docket No. 94-124
RM-8308

DOCKET FILE COPY ORIGINAL

To: The Commission

COMMENTS OF METRICOM, INC.

Metricom, Inc. ("Metricom"), by its attorneys, hereby submits these Comments in response to that portion of the Commission's Second Notice of Proposed Rule Making, released in the above-captioned proceeding on December 15, 1995 (the "Notice"), concerning the issue of whether a particular "spectrum etiquette" should be adopted. Metricom is a member of the Millimeter Wave Communications Working Group ("MWCWG") which is also submitting Comments. As a member of the MWCWG, Metricom will attempt to have its views represented in the final recommendations ultimately proposed by the MWCWG.

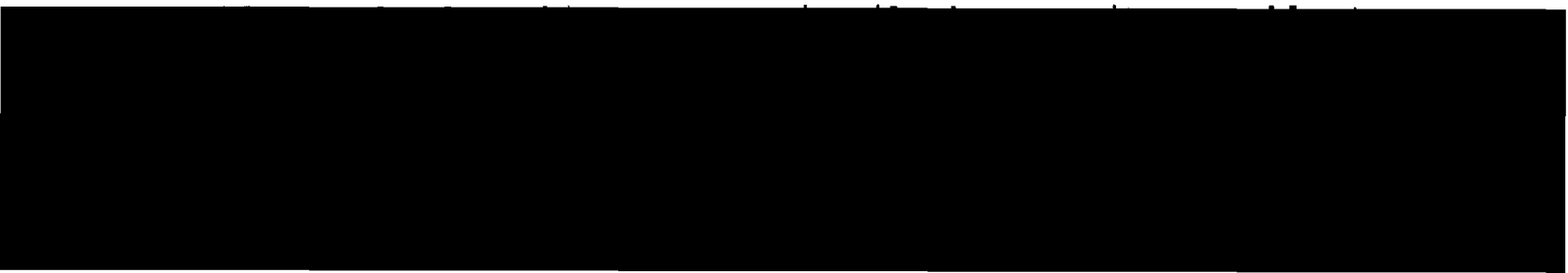
1. Metricom's position in the MWCWG has been, and will continue to be, the same position Metricom has consistently taken before the Commission: there should be no spectrum etiquette; rather, the Commission should adopt only very minimal and flexible technical standards. Metricom firmly believes that flexibility

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will promote and assure the most efficient and effective use of the spectrum for unlicensed operations. Flexible technical regulations, encouraging the utilization of adaptive and intelligent RF transceivers is especially important in the new unlicensed frequency allocation in the 59-64 GHz band. No one can predict the technology or applications which will be developed for the band. Complicated and restrictive technical specifications can only stifle innovation and development. Metricom firmly endorses the Commission's position, stated at paragraph 64 of the Notice that:

In general, we have not required spectrum etiquettes for unlicensed transmitters, believing that they were unnecessary and could restrict the development of new technology.

2. Metricom is a young, rapidly growing, technologically innovative company based in Silicon Valley. In accordance with the encouragement of the Commission in various Part 15 proceedings, Metricom is a pioneer in the development of state-of-the-art spread spectrum, packet radio systems. Metricom has invested significant sums of money, time and energy to develop, manufacture and market sophisticated RF devices which operate on an unlicensed basis pursuant to Part 15 of the Commission's Rules. Operating at a gross over-the-air transmission rate of 100 kbps and actual user data rates of up to 28.8 kbps, Metricom's Ricochet[®] service is the fastest, most easily deployable, and least expensive wide area (regional) wireless data network available today. Metricom was



operate in an unlicensed environment, with maximum flexibility and minimum rules, and thus allow its engineers to be creative.

3. Metricom submits that the Commission must recognize two basic principles if unlicensed services at 59-64 GHz are to be of maximum benefit to the public:

- 1.) Sufficient transmit power must be available to provide the type of coverage and building penetration necessary to achieve satisfactory service; and,
- 2.) Simple, flexible rules must be in place that encourage technology to develop; rules that do not stifle technology by needless over-regulation.

4. The Commission is to be commended for the great strides it has made in attempting to allocate frequency bands, with adequate bandwidths for high speed transmissions, for unlicensed operations. Unfortunately, the Commission's failure to recognize the principles articulated in paragraph 3 above may mean, for example, that a recently proposed frequency allocation for unlicensed services may prove to be counter-productive.^{1/} The recent NII/SUPERNet proposal illustrates that the Commission may not want to allow sufficient power for unlicensed operations -- and

^{1/} See Unlicensed NII/SUPERNet Operations in the 5 GHz Frequency Range, ET Docket No. 96-102 (FCC 96-193, Rel. May 6, 1996) ("NII/SUPERNet Proposal").

appears to want to over-regulate unlicensed operations by means of inflexible technical rules and specifications -- based on a misperception about interference. This misperception is premised on the supposition that unlicensed devices operating at a transmit power which would allow sufficient coverage and building penetration will cause interference. This is simply not true. Today's radios are intelligent radios, they all contain microchips. They are designed to anticipate and avoid interference. Techniques have been developed to work through the "interference environment" in which the Commission has always required unlicensed devices to operate. The level of success achieved will depend upon the techniques used, as well as the performance required, by a particular application. The market, rather than the Commission, is the best arbiter of which technology or application will succeed.

5. Because of the unpredictability of the uses of unlicensed spectrum, the Commission must continue to encourage unlicensed systems to be adaptive. Attempting to design specific technical standards for the operation of unlicensed transceivers is counter to such an adaptive approach and has not been the approach used in regulating traditional Part 15 operations. Specifying particular technical standards for every situation is not possible because it is not possible to anticipate all of the potential technology that will be employed, or the potentially great variety of spectrum uses. Furthermore, exacting technical specificity discourages and limits technological innovation because there is no room for

innovation. Exacting technical specificity is counter to the Commission's history of encouraging novel uses of unlicensed products and services; witness the simple elegance of §15.247 of the Commission's rules and the great success it has stimulated.

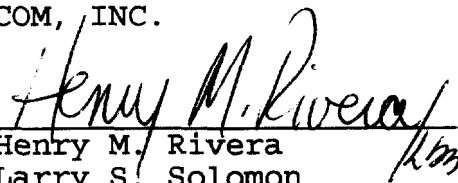
6. In order to avoid technically limiting factors, the Commission should specify the absolute minimum technical standards. Metricom believes that such an approach will allow operators and manufacturers to exercise their innovation and creativity in operating and developing reliable, affordable, high performance and high capacity services which will be in demand by the public. This type of operation and development will allow the marketplace to decide what services and products should be offered.

WHEREFORE, the premises considered, Metricom looks forward to working with the MWCWG in this proceeding, and urges the Commission to ultimately take action in this proceeding consistent with the views expressed herein.

Respectfully submitted,

METRICOM, INC.

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Dated: May 28, 1996